

### **Amendments to the Specification**

**Please amend the paragraph beginning on page 13, line 9, as follows:**

The chamber 4 encloses an X-stage 35 movable in the X-direction by an X-stage driver 36 and a Y-stage 37 movable in the Y-direction by a Y-stage driver (not shown but understood to be configured similarly to the X-stage driver 36). Also inside the chamber 34 are a cold cathode 38 (serving in this embodiment as a source of an "adjustment beam" discussed below), a specimen 39, an X-movable mirror 40 and a Y-movable mirror (not shown but understood to be similar to the X-movable mirror 40) mounted on the X-stage ~~37~~35.

**Please amend the paragraph beginning on page 13, line 25, as follows:**

Turning now to the primary column 32, a primary beam S (also termed an "irradiation beam") is produced by an electron gun 41 (or other suitable CPB source). The primary beam S passes through a "primary optical system" (also termed an "irradiation-optical system") and enters a Wien filter (also termed an "E×B" or "E×B beam separator") 42. The primary optical system in this embodiment comprises a field-stop FS1, irradiation lenses 43, 44, ~~45~~<sub>1</sub>, aligners 46, 47, a scanning aligner 48, and an aperture 49. The irradiation lenses ~~44, 45, 46~~43, 44, 45 can be, e.g., electron lenses, circular lenses, quadrupole lenses, or octapole lenses.

**Please amend the paragraph beginning on page 14, line 3, as follows:**

The trajectory of the primary beam S is deflected by the Wien filter 42 which directs the primary beam to an aperture stop AS at which a crossover image of the electron gun 41 is formed. Passing through the aperture stop AS, the primary beam S then passes through a first aligner 50. The primary beam is then refracted by passage through a cathode lens 51 so as to illuminate the specimen 39 with Koehler illumination. The aperture stop AS, first aligner 50, and cathode lens 51 collectively comprise an "objective-optical system."

**Please amend the paragraph beginning on page 17, line 1, as follows:**

As shown in FIG. 4, the cold cathode 38 is situated below the cathode lens 51. Next, the cathode lens 51 is energized by applying electrical energy thereto, while all other lenses are OFF. The cold cathode 38 produces an "adjustment beam ~~T~~"beam T that enters the cathode lens 51.

In the cathode lens 51, the adjustment beam T is subjected to the electrical field produced by the cathode lens 51. After passing through the cathode lens 51, the adjustment beam T, similar to the secondary beam K described above, passes in sequence through the first aligner 50, the aperture stop AS, the Wien filter 42, and the secondary optical system. The adjustment beam then enters the detector 52.

**Please amend the paragraph beginning on page 17, line 10, as follows:**

Dot-pattern data carried by the adjustment beam T incident to the detector ~~14~~52 (similar to the secondary beam K) are transferred sequentially to the relay lens 60, the pickup element 61, the controller 62, and the CPU 63. The resulting image of the dot-pattern is displayed on the display 64.

**Please amend the paragraph beginning on page 20, line 10, as follows:**

With respect to this embodiment, reference is first made to FIG. 5 in which components that are similar to corresponding components in the first representative embodiment have the same reference designators. As in the first embodiment, the FIG.-5 embodiment comprises a primary column 32, a secondary column 33, and a chamber 34 all evacuated by a suitable vacuum system (not shown). Inside the chamber 34 are an X-stage 35 (movable in the X-direction by an X-stage driver ~~35~~36) and a Y stage 37 (movable in the Y-direction by a Y-stage driver, not shown). On the X-stage ~~34~~35 are mounted a "fiducial plate" 70, a specimen 39, an X-movable mirror 40, and a Y-movable mirror (not shown).

**Please amend the paragraph beginning on page 26, line 14, as follows:**

An alignment beam T emitted from the dot-pattern 70a sequentially passes through a cathode lens 82 and an imaging-optical system to the detector ~~52~~52'. The imaging-optical system, like the secondary optical system in the CPB-optical system, comprises an aperture stop AS3, a front imaging lens group 83, a field-stop FS3, and a rear imaging lens group 84.

**Please amend the paragraph beginning on page 26, line 19, as follows:**

The alignment beam T incident to the detector ~~52~~52' forms an image of the dot-pattern 70a by means of the imaging-optical system. The image of the dot-pattern 70a is converted by

the detector ~~52~~52' into a corresponding optical image. The optical image passes through a relay lens 85 and enters a pickup element ~~61~~61'. Light incident to the pickup element ~~61~~61' is converted into a corresponding photoelectric signal that is routed to a ~~first~~ controller 62. The ~~first~~ controller 62 converts the photoelectric signal into a corresponding electrical signal that is routed to the CPU 63.

**Please amend the paragraph beginning on page 26, line 27, as follows:**

As data concerning the dot-pattern 70a detected by the pickup element ~~41~~41' is routed to the CPU 63, stage-position data obtained by the X-interferometer 67 and the Y-interferometer are routed back to the X-stage driver 36 and the Y-stage driver. Responsive to such feedback, the position of the dot-pattern 70a is thus adjusted to align accurately with the optical axis of the off-axis optical system.

**Please amend the paragraph beginning on page 29, line 19, as follows:**

Data generated by the detector 52 as the detector receives the adjustment beam T are routed sequentially to the relay lens 60, the pickup element 61, the ~~first~~ controller 62, and the CPU 63. The CPU generates a corresponding signal that is routed to the display 64 that displays a corresponding video image of the dot-pattern.

**Please amend the paragraph beginning on page 36, line 24, as follows:**

Turning now to FIG. 14, a MOS-type emitter is shown schematically. In this embodiment, an insulating film 117 (desirably SiO<sub>2</sub>, approximately 10-nm thick) is formed by thermal oxidation on the surface of an n-Si substrate ~~18~~118. Atop the insulating film 117 is formed a gate electrode 116 (desirably made of aluminum or amorphous silicon, and having about the same thickness as the insulating film 117). A rear metal electrode 102 (desirably aluminum) is formed on the rear surface of the substrate 118. Whenever a normal bias is impressed on the rear electrode 102 and the gate electrode 116, an electron beam E is emitted.